

# INTERNATIONAL PATENT COOPERATION AGREEMENT

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<p>To:</p>  <p>See Form PCT/ISA/220</p>
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## PCT

Written Office Action from  
the International Search Office  
(Rule 43 to 1 PCT)

File No. of applicant or attorney: see Form PCT/ISA/220		Mailing date: (day/month/year): see Form PCT/ISA/210 (page 2)	
International File No: PCT/EP2005/002282		<b>FURTHER STEPS</b> see Point 2 below	
International filing date(day/month/year): 03.04.2005		Priority date(day/month/year): 03.20.2004	
International patent classification (IPC) or national classification and IPC: C12G1/02; A23N1/00			
Applicant: <b>FORSCHUNGSZENTRUM KARLSRUHE GMBH</b>			
<p>1. This action contains information to the following points:</p> <p><input checked="" type="checkbox"/> Field No: I Basis for action</p> <p><input type="checkbox"/> Field No. II Priority</p> <p><input type="checkbox"/> Field No. III No expert opinion on novelty, inventive activity and commercial usability</p> <p><input type="checkbox"/> Field No. IV Lack of uniformity of invention</p> <p><input checked="" type="checkbox"/> Field No: V Determination acc. to Rule 43bis. 1(a)(i) concerning the novelty and inventive activity and desired commercial usability; documents and explanations to support this determination;</p> <p><input type="checkbox"/> Field No: VI Specific cited documents</p> <p><input type="checkbox"/> Field No: VII Specific deficiencies of the international application</p> <p><input type="checkbox"/> Field No: VIII Specific comments to the international application.</p> <p>2. <b>FURTHER STEPS</b></p> <p>If a request for International Preliminary Examination is made, this action is considered a written action by the office in charge of the international preliminary examination ("IPEA"). This is not the case if the applicant selects a different office than this one for the IPEA and the selected IPEA has informed the international search office acc. to Rule 55.1 to b) that the written office actions from this international search office are not recognized.</p> <p>If this office action is considered a written IPEA action, as provided in the above, then applicant is urged to provide a written response and submit, if applicable, changes prior to the end of a 3-month period starting with the date of mailing the Form PCT/ISA/220, or prior to the end of 22 months starting with the priority date, depending on which deadline comes last.</p> <p>For additional options see Form PCT/ISA/220.</p> <p>3. Further details see the comments to Form PCT/ISA/220.</p>			
Name and mailing address of International Search Office: European Patent Office - P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk - Pays Bas Tel: +31 70 340 - 2040 Tx: 31 651 epo nl Fax: +31 70 340 - 30165		Authorized employee:  <b>Koch, J.</b> Tel. +31 70 340-43074	

Form (PCT/ISA/237) (cover sheet) (January 2004)

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(ATTACHED PAGE)

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**Field No: I    Basis for action**

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1. With respect to the **language**, the action based on the international application was written in the same language as the filed application, insofar as not indicated otherwise.  
  
☐ Due to a translation of the application from the original language, this action was provided in the language of the translation for which an international search request was filed (acc. to Rules 12.3 and 23.1b)).
2. Concerning **the nucleotide and/or amino acid sequence** disclosed in the international application and claimed for the invention, the action is based on the following:
  - a. Type of material  
☐ sequence protocol  
☐ table(s) for sequence protocol
  - b. Form of material  
☐ written form  
☐ computer-readable form
  - c. Date of filing  
☐ contained in the submitted international application  
☐ together with the international application in computer-readable form  
☐ subsequently filed with the office for the purpose of the search
- 3.☐ If more than one version or copy of the sequence protocol and/or an associated table were filed, the required statements were also submitted that the information in the later submitted form or additional copies coincides with and/or does not exceed the information in the originally filed form
4. Additional comments:

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**Field No. V Determination based on Rule 43bis.1(a)(i) concerning novelty, inventive activity and the commercial usability; documents and statements for supporting this determination.**

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**1. Determination**

Novelty: Yes: claims 1-5, 9-11  
No: claims 6-8, 12

Inventive activity: Yes: claims 1-5  
No: claims 7-12

Commercial usability: Yes: claims 1-12  
No: claims

**2. Documents and explanations:**

**see attached page**

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International File No: 10/593694  
PCT/EP2005/002282

**To Point V.**

**The substantiated determination with respect to novelty, inventive activity and commercial usability; documents and explanations for supporting this determination.**

1. We refer to the following documents:

- D1: WO 03/070026 A (DSM IP ASSETS B.V.; STARK, JACOBUS; DUTREUX, NICOLE, LILIANE) August 28, 2003 (2003-08-28)
- D2: EP-A-0 728 189 (INSTITUT NATIONAL DE LA RECHERCHE AGRONOMIQUE) August 28, 1996 (1996-08-28)
- D3: FR-A- 2 826 665 (BRUNET) January 3, 2003 (2003-01-03)

2. The present application does not meet the requirements with respect to Article 33(1) PCT because the subject matter of claims 6-8 and 12 is not new within the meaning of Article 33(2) PCT.

2.1 Document D1 discloses (see line 13 on page 3 - line 5 on page 4; Example 3; lines 12-18 on page 6) a device for the electroporation of grape must, which device comprises a dielectric flow channel and at least two electrodes installed in the wall of the flow channel for forming a pulsed, electric field.

The last paragraph in claim 7 is not clear (Article 6 PCT) because it conflicts with the next to the last paragraph ("project into the flow channel" as opposed to "countersunk or mounted flush or projecting into flow channel") and, in addition, is an attempt to define the subject matter of the claim simply by means of the result to be obtained ("the [...] surface [...] is used for controlling/delimiting [...];" "cross section and [...] length [...] are dimensioned such that the must [...] has an electric resistance which at most equals the impedance of a [...] high-voltage pulse generator").

For that reason, the last paragraph in claim 7 is not taken into consideration for the assessment of novelty.

Claim 8 is also unclear ("the electrodes are arranged opposite each other in pairs, at an angle to/offset to the flow axis") and is therefore not considered to have features that exceed those disclosed in claim 7.

The subject matter of claims 7, 8 and 12 is therefore not new (Article 33(2) PCT).

- 2.2 Documents D2 (see line 29 on page 2 - line 25 on page 3) and D3 (see Abstract; pages 1 & 2) disclose a number of processes for improving the yield during the extraction of grape-skin components within the framework of processing a grape must.

Examiner believes that the young wines and wines produces with the process described in D2 and D3 does not analytically differ from the young wine and wine produced by using the claimed electroporation process.

The subject matter of claim 6 is therefore not new (Article 33(2) PCT).

3. The dependent claims 9-11 do not contain features which, in combination with the features of any other claim to which they refer back, meet PCT requirements with respect to inventive activity. The reasons are as follows:

The dependent claims 9-11 relate to insignificant changes in the device disclosed in claim 7, which are within the scope of activity of one skilled in the art, following deliberations, especially since the advantages achieved therewith can be seen without problems. As a result, the subject matter of claims 9-11 is therefore also not based on inventive activity.

4. The document EP0728189 (D2) is considered the closest prior art to the subject matter disclosed in claims 1-6. This document describes diverse processes for improving the extraction of quality-enhancing constituents in the grape skin during the wine production.

- 4.1 The process claimed in the present application (see claim 1), differs from the process as disclosed in D2 in that a different mechanism is used, namely the irreversible opening up of the cell walls of grape skin cells by means of electroporation, for the which the flowing must is admitted with pulsed, electrical fields.

The pulse duration in this case is 0.5-3 microseconds, the potential difference at the cells is at least 100 volt, but below 1000 kV/cm.

- 4.2 The subject matter of claim 1 is therefore new (Article 33(2) PCT).
- 4.3 The object to be solved with the present invention can therefore be seen as providing a process, which permits a particularly careful and energy-saving release of quality-enhancing constituents from the skins of grapes and, as a result, the production of young wine and wine with improved organoleptic characteristics.
- 4.4 The solution proposed in claim 1 of the present application is based on inventive activity for the following reasons (Article 33(3) PCT).  
The electroporation of a flowing grape must is not described in or suggests itself according to prior art.  
The development and/or use of an electroporation process as disclosed in claim 1, which solves the technical object without simultaneously resulting in undesirable effects, such as the chemical decomposition of the must (see page 7; § 1 of the specification), exceeds the scope of action of one skilled in the art who acts within the framework of reasonable experiments that promise success.
- 4.5 Claims 2-5 are dependent on claim 1 and therefore also meet the PCT requirements with respect to novelty and inventive activity.